



# THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং 587 দিশপুৰ, বৃহস্পতিবাৰ, 11 আগষ্ট, 2022, 20 শাওণ, 1944 (শক)

No. 587 Dispur, Thursday, 11th August, 2022, 20th Sravana, 1944 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

OFFICE OF THE GUWAHATI METROPOLITAN DEVELOPMENT AUTHORITY

## NOTIFICATION

The 9th August, 2022

No. GMDA/GEN/150/2022/16.-

### **DRAFT NOTIFICATION FOR PUBLICATION OF POLICY ON TRANSIT-ORIENTED DEVELOPMENT (TOD) FOR THE GUWAHATI MASTER PLAN 2025**

Whereas the National Transit Oriented Development (TOD) Policy has stressed on integration of the land use and transport planning for sustainable urban growth along transport corridors and nodes with high density mix use development.

Whereas, Government of India, has identified formulation and implementation of a TOD policy in achieving planned urban development and offers special assistance to states for capital investment (2022-23) on implementation of this policy and accordingly, Govt. of Assam is formulating a state policy on this.

Whereas, the Master Plan and Zoning Regulations 2025 requires to be modified to accommodate this policy as a tool for urban development within Guwahati Metropolitan Area and accordingly Govt. of Assam has approved this draft policy vide GDD.241/2022/19 dated 09.08.2022

Now therefore, to modify the existing Master Plan and Zoning Regulation 2025 for this purpose, and in exercise of the power conferred under Section 22 (1) & (3) of GMDA Act, 1985 (as amended), GMDA is pleased to prepare and publish the following draft Transit-Oriented Development (TOD) policy for Guwahati Master Plan Area as described in Schedule I, which will be integral part of the Master Plan for Guwahati Metropolitan Area – 2025 as published vide GMDA/MP/1/98/Part-I/103 dated 7<sup>th</sup> July, 2009 as Chapter – 15 on its final approval.

### **Notice for publication of the draft Transit-Oriented Development (TOD) policy 2022**

It is notified that the detail Transit-Oriented Development (TOD) policy prepared under Section 22(1) is hereby published under Section 22(3)

The detail policy as described in Schedule-I may be inspected free of cost during office hours at the Office of the Chief Executive Officer, Guwahati Metropolitan Development Authority and will also be available in GMDA's official website: <http://www.gmda.assam.gov.in>

Objections/suggestions from any organization/person is invited with respect to the policy within 10 days from the date of issue of this notification.

**SCHEDULE - I****DRAFT NOTIFICATION FOR PUBLICATION OF POLICY ON TRANSIT-ORIENTED DEVELOPMENT (TOD) FOR THE GUWAHATI MASTER PLAN 2025****CHAPTER - 15 of MASTER PLAN FOR GUWAHATI METROPOLITAN AREA 2025**

The Master Plan and Zoning Regulation for Guwahati was published vide the Assam Gazette Extraordinary Notification No. 198 Dispur, Thursday, 9<sup>th</sup> July 2009 and Corrigendum No. 199 Dispur, Friday 10<sup>th</sup> July 2009 and Corrigendum No. 62 Dispur, Tuesday, 16<sup>th</sup> March, 2010. Certain modification has also been made in the Master Plan from time to time considering the requirement of such modifications due to needs of plan development and to facilitate implementation of policies and goals formulated from time to time by Government of India and the State.

Based on this Master Plan proposal a comprehensive Mobility Plan 2009 was also prepared where the Master Plan and Transportation corridors were given a clear shape with such modifications as required.

The National TOD policy has stressed on development of macro as well as micro level development that is required to be formulated along the Transit Corridors and made to facilitate complete ease of access to the Transit facilities thereby encouraging the people to prefer to walk and use public transport over personal mode. Its should also act as preferred mode to promote high level of accessibility for Non-Motorized Traffic to the last mile connectivity. To ascertain this, increase FAR and mixed use development along identified transit corridors of Master Plan with high density of population is required to be framed as part of the plan. Government of India has also identified this as one of the essential urban reforms for urban development and asked to implement this reform along with the other identified urban reforms. Accordingly this draft / policy on Transit Oriented Development for the Guwahati Metropolitan area has been framed taking into consideration the National policy and the policy for the State of Assam with such minor alteration or modification required for facilitating its implementation within the Guwahati Metropolitan Area.

Some of the most relevant modifications that facilitate the implementation of the urban reform agenda of Government of India i.e., TOD and TDR policy framed by the Government of Assam are:

1. Modification made vide notification GMDA/GEN/11/2012/373 dated 12/11/2015 where certain land act as shown in fig 1 are brought under Public and Semi-Public Zone to facilitate establishing a state government Directorate complex in Betkuchi near the Inter-District Bus Terminal (ISBT) where Centre, Balaji Mandir Complex and Royal Global University Campus are existing to create a more vibrant Traffic Nodal Point.
2. Modifications made vide notification GMDA/GEN/13/2009/150 dated 23/10/2017 where landuse of 571 Bighas (81 Ha approx.) land is in village Jalah in the Northern edge of Master

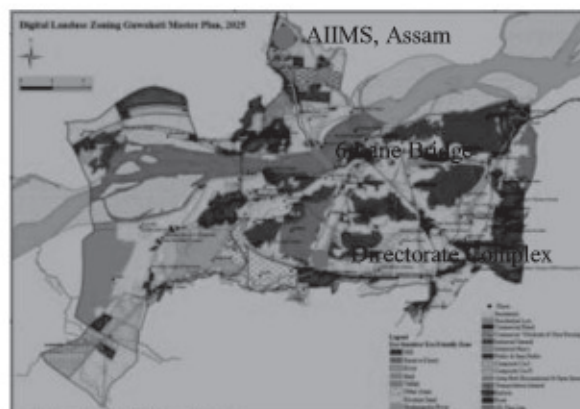


Figure 1 Guwahati Master Plan Area 2025



Plan as shown in Fig 1 has been changed to Public and Semi-Public Zone to facilitate establishment of AIIMS, Assam which has started its function partially already, thereby creating a destination zone of a sizeable traffic mode.

3. Modification of the Master Plan vide GMDA/GEN/69/2019/186 dated 25/02/2021 for 6 lane bridge between South and North Guwahati to facilitate the smooth and direct connectivity to AIIMS, Assam and other important establishment in North Guwahati.



Figure 2 Spatial Growth of GMA

The modifications made by authority as explained above also fit in the proposals envisages in the mobility plan as traffic generation and destination zone for establishing a Transit-Oriented Development Zone. As shown from the spatial growth of GMA in the comprehensive Mobility Plan for Guwahati in Fig 2.

### 15.1 Transit-Oriented Development (TOD)

Transit Oriented Development (TOD) has been the buzzword in planning circles internationally since the nineties. In the Indian context, certain cities already had characteristics that could be linked to TOD in the future. It is only in the early 2000s when cities started investing in projects like metro-rail that TOD started to be implemented on cities demanding transit, efforts have involved in adopting TOD concepts in the Indian context for which a National Policy was formulated on May 2017.

India is urbanizing at a rapid pace with urban population rising much faster than its total population. Level of urbanization has increased from 17.29% in 1951 to 31.6% in 2011. The urban population of India is poised to grow from 377million to 600 million by 2030. This rapid urbanization has led to horizontal growth of the cities thus creating problems of urban sprawl.

#### What is Transit-Oriented Development (TOD)?

- TOD integrates land use and transport planning and aims to develop planned sustainable urban growth centers, having walkable and livable communes with high density mixed land-use. Citizens have access to open green and public spaces and at the same time transit facilities are efficiently utilized.
- TOD concentrates on the development of high-density mixed-use developments in the transit station influence zone, i.e. within walking distance of (500-800m) transit stations or along the corridor if station spacing is around 1km, as indicated in Figure 1. TOD promoted walking trips to numerous destinations such as shopping, entertainment, and employment.

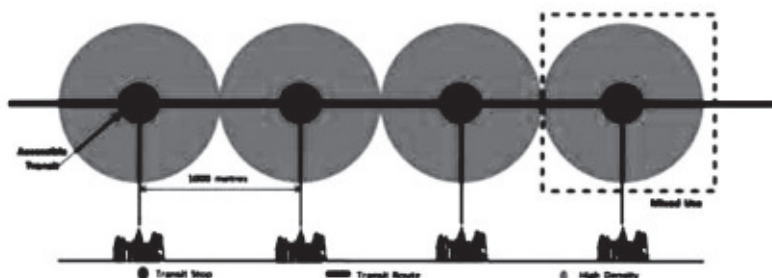


Figure 3 TOD along Transit Station

- TOD improves transit station accessibility by implementing pedestrian and non-motorized transportation (NMT) friendly infrastructure that benefits the general public by increasing transit facility ridership and improving the economic and financial viability of the system. Due to the mixed land use of the transit corridor, where transit stations are either origin (housing) or destination (work), the corridor experiencing peak hour traffic in both directions would optimize the usage of the transit system.

### *15.2 Proposed TDR policy in Guwahati Metropolitan Area*

Assam is the second largest state among the seven sister states in India's north-eastern area, and it is surrounded by six other northeastern states. Assam makes up 2.4 percent of the country's land area and around 78,438 square kilometers, or one-third of the North Eastern region's area. As per census 2011, Guwahati, Silchar, Dibrugarh, Jorhat and Nagaon are five highest populated cities/towns of Assam. As per guidelines on *Part – VI of the Scheme for Special Assistance to States for Capital Investment, 2022-23 (Urban reforms)*, all cities with million plus population shall be eligible for framing TOD policy. According to this policy, only the city of Guwahati, which has a million residents, is qualified for TOD policy for Assam as per the urban reform agenda of Government of India.

Guwahati, the premier urban center of Assam, is the only million city in north-east India. It is the fastest growing urban centre and the most important city of the Kamrup region. As per census 2001, the city's population is 8.9 lakh, which has now crossed the one million mark (Census 2011). The jurisdiction limit of the city during the period of 1971 to 2001 is increased from 43.82sq.km to 216.79 sq.km, and so the population. The population of the city has grown almost 6.5 times during the same period. The proposed population of the city is expected to cross the three million mark in 2045. Currently, Guwahati Master Plan 2045 is in the process and GMDA is in charge of the preparation and implementation of the proposed master plan. It stated vision is to create a more livable, socially beneficial, sustainable, viable growth and a shift towards Low Carbon Mobility through a Transit-Oriented Development (TOD)

TOD has been recognized as a critical determinant for low-carbon mobility, development along mass transit by bringing homes and jobs closer to mass transit, compact development with mixed landuse that allows for optimized development along transit corridor. Residential, commercial, and office space, or a combination of the three, are all included in mixed-use developments. Generally, mixed use development is within easy access to transit corridors. Residents are more likely to use public transportation than private vehicles as a result of development near transit corridors. The strategy incorporates key components such as mixed-use development, non-motorized transportation, pedestrian priority, and supporting a walk-to-work culture.

### *15.3 Comparison of TOD*

#### *15.3.1 DENSITY*

The provision of a much higher FAR of maximum up to 400 on the entire merged property will promote development / redevelopment in the TOD zone. These higher standards, however, shall only be available for plots of 2000 sq.m. abutting on a road of minimum 10m (if required by amalgamation of several plots) for which a comprehensive integrated scheme must be prepared. A development can be carried out in phases within an approved scheme area in the TOD Zone with a minimum plot size of 600sq.m at a time. Mass Rapid Transit System (MRTS) agencies such as Metro Rail Transit System (MRTS) and Railways will be required to build plans with a minimum area of 1000 sq.m.

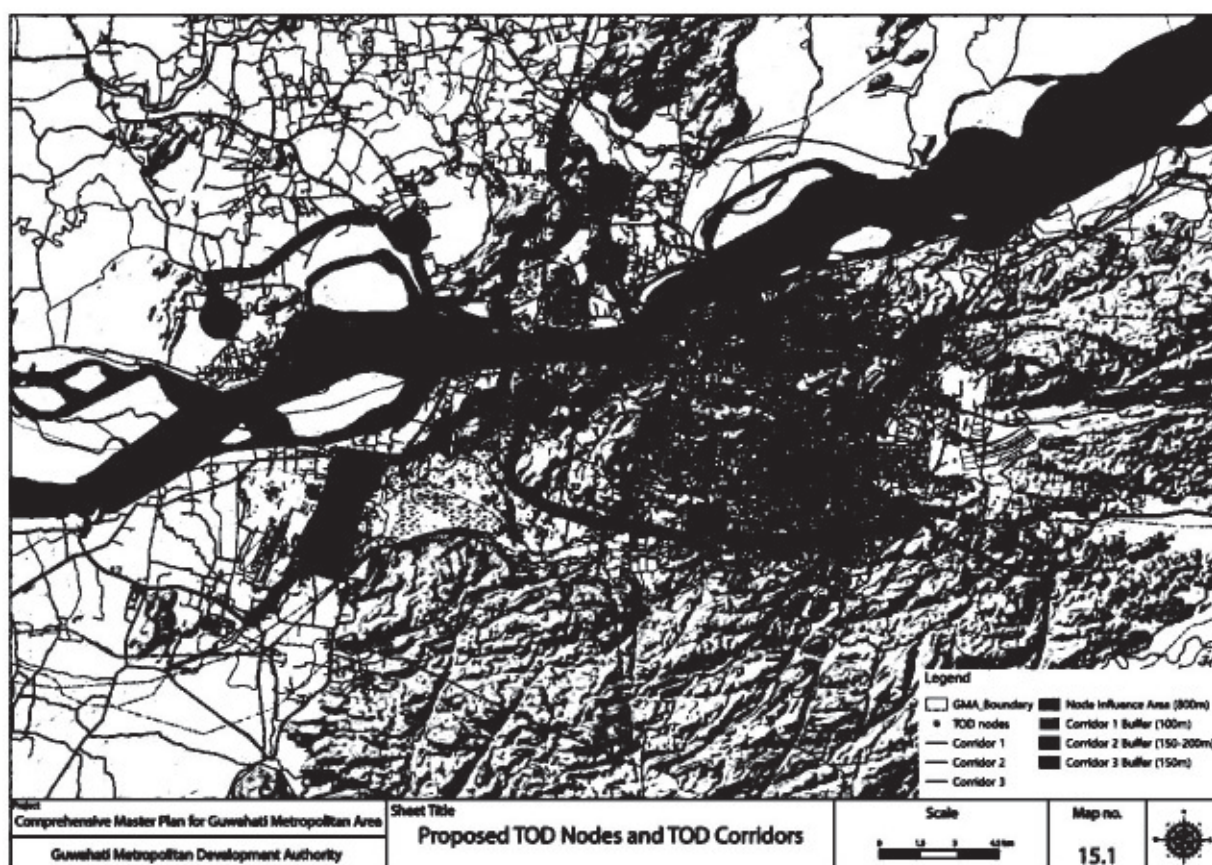
The proposed TOD corridors shall primarily having composite (i.e. Mixed Use) Residential, Commercial, mixed Residential zone, mixed Commercial Zone and public and semi-public zone along with a higher FAR from the allowable premium FAR subjected to maximum 400 as given in detail in Table 1. Hence,



these zones will be densified. This is subject to meeting the requirements of other provisions of the building bye-laws. The projected population of Guwahati Planning Area is 2.25 million by 2025, hence metro rail as a rapid transit system will come in coming years along some of the major routes in phases through Master Plan has particularly LRTS.

### 15.3.2 DIVERSITY

A mixed-use, mixed-income development (as conceived in Master Plan as Composite Zone) around stations with residential, commercial, and community facilities is mentioned in TOD policy as being ideal for the area around Transit lines and origin & destination nodes as shown in Map 15.1.



**Map 15.1: Proposed TOD Nodes and TOD Corridors**

While delineating the influence area along the transit corridors and nodes, maximum availability of permissibility of land-use, proposals of Master Plan were taken into considerations.

### Transit Corridors –

#### Criteria for selection of the corridors

- Proposed corridors based on Proposed Bus Terminals, Bus Depots & Integrated Freight Complex
  - Bridges across River Brahmaputra which includes the new 6 lane bridge connecting bharalumukh and North Guwahati and Proposed Bridge connecting Palashbari and Sualkuchi
  - To achieve a circular Public Transport Corridor
  - Availability of a minimum of Right of way of 24 m is the prime criteria for selection of the proposed TOD corridors.
- Corridor 1 – Primarily within the main city area will have 100m as influence area on both sides from the boundary of ROW.

2. Corridor 2 – Along the National Highways, NH bye-pass, State Highways and Dharapur to Airport via SOS road will have 150-200m.
3. Corridor 3 – from newly constructed Brahmaputra Bridge to AIIMS, Assam will have 150m as influence area on both sides from the boundary of ROW.
4. TOD Nodes/Zones – The influence areas around the major nodes will extend from 500-800m as shown in the Map 15.1. However, the influence area around the LGBT Airport has been identified considering the requirement of International Airport in coming years where a separate influence area has been identified.

Detailed calculation of additional FAR and break-up of maximum FAR allowed against different uses and other details are given Table 1 and below –

Let,

Base FAR as specified in Bylaw = A

Premium FAR as specified in Bylaw = B

Additional FAR = C

= 40% of (A+B)

TDR FAR as per TDR Policy = D

Total FAR allowable in TOD = M

= A+B+C+D subjected to maximum 400

<b>50% of M specification – (in any zone) where TOD is allowed</b>	
<b>Residential Use</b>	Minimum 30% with min. 30 % of this to be reserved for affordable housing less than 66 sq.m. dwelling unit)
<b>Commercial Use</b>	Maximum 10%
<b>Community Facilities</b>	Maximum 10%
<b>The remaining 50% of M specification –</b>	
For designated <b>Residential Zone</b>	As per Land Use admissibility of exiting Master Plan and Zoning Regulations 2025
For designated <b>Commercial Zone</b>	
For designated <b>Public &amp; Semi-Public Zone</b>	
For Composite Zones I and II	

Table 1 Land Use category specifications

*Note - This additional FAR permissible along the Transportation Corridors and around the nodes as specified in Map 15.1 will not be allowed in areas identified as Eco-Sensitive Zone, Eco-Friendly Zone, Green Belt and other zones not specified in Table 1 as notified in the Master Plan and also in the notified hills and water bodies, even if these areas come under the Transport corridor or influence area of the identified nodes shown in Map 15.1.*

1. Additional FAR allowed in plot more than 2000 sq.m abutting a road of 10m subject to maximum 400 FAR.



2. The additional FAR (*i.e.*, C) shall be treated as premium FAR and shall be charged as premium FAR.
3. The fees collected for this additional FAR (*i.e.*, C) shall be deposited in a escrow account and this will be utilized for development of infrastructure in the TOD influence zones and corridors.
4. The policies shall encourage amalgamation and reconstitution of plots for utilization of higher FAR with allowing incentives such as relaxation in set backs up to 15% and with no cap on coverage.
5. If a maximum of 50% of a plot or amalgamated plot falls within the transit corridor or influence area of the identified nodes it will qualify for the TOD benefit.
6. The Community Facilities will mean activities related to education, health, sports, religion and entertainment. There shall be a mix of Housing types for a wide range of income brackets within communities with shared public spaces/ green/ recreational facilities/ amenities, which will minimize gentrification and foster more community-oriented developments.
7. No Compound wall/ fencing shall be permissible in the plot facing the road and maximum of 2.5m shall be kept accessible to pedestrian to be used as footpath.
8. In case of independent building/bungalow for self use, such development or re-development shall be allowed but no TOD benefit will be allowed.
9. In case of existing/or under construction buildings maximum of 1 (one) additional floor, shall be allowed for availing this additional FAR subject to structural safety certificate from Registered Structural Engineer/Structural Review Panel on record.
10. Wholesale stores, car dealer showrooms, warehouses, storages, auto service centres, garages etc. shall not be eligible for benefits under TOD Policy.
11. Additional FAR under Transferrable Development Rights (TDR) Policy of the State is allowed in TDR zone subject to maximum FAR allowed under this TOD Policy.
12. In case of any dispute on interpretation of this policy, decision of the authority shall be considered as final.

### 15.3.3 Design

A key component of TOD is design, which includes well planned land-use combinations, safe and easy access to transit stations facilitated by sidewalks, bicycle lanes, street lights, etc., and amenities that assist create a pleasant atmosphere. Guwahati's TOD policy promotes the use of TOD by emphasizing the importance of an NMT-friendly environment in the last connectivity network.

Citywide footpath are already being proposed in the Master plan and cycle tracks are required to be developed along the last mile connectivity corridors to increase the modal share of the NMT system. Also, Public Bi-cycle Sharing (PBS) system including 3 wheeler e-richshaws, that would provide affordable transit should be provided from the transit nodes for last mile better connectivity. However no separate road will be proposed for the 3 wheelers, and they would use the vehicular roads. Changes to important elements of the Development Code, such as revised setback requirements, the elimination of boundary walls, and the use of build-to-edge structures with active frontages that act as "eyes-on-the-street," will make it safer for women and children to use public transportation or to walk at night.

### 15.3.4 Accessibility

In order to increase transit use while providing convenience, all modes of transportation must be safe and accessible to the mass transit stop. 20% of land shall be used for roads/ circulation areas. 20% area for green open space shall be kept open for general public use at all times. Further, 10% area of green area may be

for exclusive use. Considering the provisions of TOD model multiple streets are required to be proposed for paid on street parking to mitigate the parking demand of the city.

#### 15.4 Inferences

Though TOD policy and the current situation do not harmonize with each other, it can be observed that many of the roads which are devoid of footpath which caused conflicts between pedestrian and vehicles can be developed as proposed in the Master Plan. Increased densities will lead to increase in vehicles, which will require additional parking facilities. Since the increase in FAR allowable in the policy is subject to meeting other provisions of the building bye-laws, the density of a place is expected to be within limited control.

#### 15.5 Justification

The detailed Development Plans when developed should incorporate a balanced transport system serving the land-use to enhance the regional mobility. That requires an integration of land-use patterns and transport systems during the development of this plan. This is a common practice elsewhere in the world.

However, in India, most of the City Development Plans developed have not integrated the transport system plans into them. All these years, the transport system planning is not been considered as a vital component of the overall planning of cities. As a result, the transport planners have to fit in a transport system into the already planned or developed landuse patterns. This has resulted in contributing a not so efficient transport system that serves the urban population to the maximum extent. A Transit Oriented Development plan would bring out the relationship between the landuse and public transport more clearly and efficiently. A Transit Oriented Development would allow the growth and redevelopment to take place along the transit corridors. In other words, the densities would be higher and aligned along the corridors of transit systems. Conversely, the transit corridors would pass through high density patterns. In this regard, the TOD principles were applied on the planned transit corridor where the density patterns were redistributed to be centered. Since the travel generated in an urban area is a function of landuse, by having high density patterns spread around a transit corridor (which is a TOD itself), a significant impact on travel characteristics is observed.

Mode	2031 - Do Nothing		2031	
	Without Mass Transit		With Mass Transit with TOD	
Private Vehicle (PV)	92279	73%	62179	49%
Intermediate Public Transport (IPT)	20671	16%	14853	12%
Public Transport (PT)	13170	10%	49088	39%

**Table 2 Before and after applying TOD principles**

*Source: Comprehensive Mobility Plan, 2009*

The travel demand model developed to forecast the travel patterns and mode shares under different landuse scenarios for Guwahati is used for the study of Comprehensive Mobility Plan, 2009 for Guwahati. Based on the travel pattern and the centers of attraction in the city, a Mass Transit is proposed on six major corridors. Some portion of these corridors and the nodes were integrated with the Master Plan proposal to create a viable Transit Corridors in this policy. Most of the work centers and the CBD area are served by



these corridors. It is estimated that about 50% of the population and 50% of the employment were distributed along the transit corridors. The impact observed by doing so is significant enough to demonstrate the importance of following TOD principles in urban areas. The most significant impact of having TOD is the increase in the public transport mode share. As per the Comprehensive Mobility Plan, 2009, in the absence of any TOD, the public transport mode share is found to be around 10% for the year 2031. However, under the TOD scenario, the same mode share jumped to about 39%. With the National Urban Transport Policy (NUTP) advocating the importance of public transport in cities, incorporating land use and transport in the form TOD will immensely contribute towards achieving the vision of NUTP. The change in the mode shares of different categories of vehicles before and after applying TOD principles is shown in Table 1.

Other important positive impacts of introducing TOD in an urban area are on the congestion ratios and the speeds. Five different locations along the transit corridor are identified and the impact of TOD is observed at these locations.

The reductions in the volume-capacity ratios and the increase in speeds are shown in Table 2. It can be concluded that a successful Transit Oriented Development can significantly increase the public transport mode share. It would hence imply that the private vehicle ownership will be reduced in areas where TOD is implemented. The study also reveals that TOD relieves congestion along major corridors and thereby increases speeds on these corridors.

Sl.No.	Name of the Road	Volume-Capacity Ratio		Speed km/hr	
		Do Nothing	With TOD	Do Nothing	With TOD
1	GS Road	1.53	0.87	18.1	22.2
2	Zoo Road	1.51	0.77	19.3	21.4
3	Lokhra Road	1.39	0.82	16.8	20.07
4	AT Road	1.51	1.02	14.8	19.7
5	Fatasil Ambari road	1.25	0.93	17.6	21.3

**Table 3 Reductions in the volume-capacity ratios and the increase in speed**

*Source: Comprehensive Mobility Plan, 2009*

**KAUSAR JAMIL HILALY,**  
Chief Executive Officer,  
Guwahati metropolitan Development Authority.